

**Specification of Competency Standards**  
**for the Automotive Industry**  
**Unit of Competency**

Functional Area - Vehicle Servicing

Title	Master the complicated techniques of vehicle body and frame
Code	108739L4
Range	This unit of competency is applicable to technicians working at vehicle servicing and inspection departments. Practitioners should be able to master the effect of vehicle body and frame affecting driving stability, noise, seepage and compartment appearance to enhance the efficiency and accuracy of complicated defects inspection.
Level	4
Credit	6 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Knowledge (Relevant vehicle body and frame)</p> <ul style="list-style-type: none"> <li>• Materials for vehicle body and frame <ul style="list-style-type: none"> <li>○ Good understanding of the characteristics and adaptive ranges of different metals, non-metals and plastics</li> <li>○ Master the joining methods of different materials, their strength and application limits</li> <li>○ Master the methods of damage testing of different materials (e.g. fractures and ageing)</li> <li>○ Rectification of vehicle body and frame</li> <li>○ Good understanding of the principles of rectification and repair, such as ductility and heating, etc., for deformed or damaged materials; as well as the impact on strength of the material due to the incident and repair process</li> <li>○ Master the standard specifications of reference points locations for vehicle frame or structural panels</li> <li>○ Good understanding of the relationship between wheel alignment and the orientation of vehicle frame or structural panels, as well as its impact on driving stability</li> </ul> </li> <li>• Sealing of compartment <ul style="list-style-type: none"> <li>○ Understand the causes and sources of abnormal noises when vehicle running, such as clashing, vibrating and loosening of related devices inside or outside the cabin, and air current</li> <li>○ Understand the conditions for aligning vehicle doors and windows, as well as the functions of plastic pads and rails</li> </ul> </li> <li>• Painting and protection of vehicle body and frame <ul style="list-style-type: none"> <li>○ Master the protective paints applied on various kinds of materials for vehicle body or frame, their characteristics and spraying methods</li> <li>○ Good understanding of the characteristics, application and handling methods of various kinds of vehicle paints</li> <li>○ Master the colour tuning of paints, colour matching and treatment of glossy surface</li> <li>○ Good understanding of the characteristics and application of different fillers</li> </ul> </li> <li>• Master the relevant laws and regulations governing the dimensions of various types of vehicle bodies.</li> </ul> <p>2. Performance (Inspection and defect analysis of vehicle body and frame)</p> <ul style="list-style-type: none"> <li>• Conduct inspection and defect analysis on respective vehicle body and frame according to abnormal symptoms of driving instability, such as yawing.</li> </ul>

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	<ul style="list-style-type: none"> <li>• Conduct inspection and defect analysis on respective vehicle body and frame according to abnormal symptoms of noise or seepage when vehicle running caused by unsatisfactory compartment sealing.</li> <li>• Conduct inspection and defect analysis according to symptoms of abnormal compartment appearance, such as: <ul style="list-style-type: none"> <li>○ Uneven discolouration of coating and colour fading</li> <li>○ Abnormal rustiness</li> </ul> </li> <li>• Review the causes of defects and diagnostic methods; submit report to seniors covering preventive measures, instructions on inspection and maintenance as well as suggestions for improvement.</li> <li>• Provide appropriate repairing guidelines according to the extent of rustiness or damages of vehicle frame or structural panels, such as specification of materials, welding methods and joining standards, to guarantee that the structural strength (including the dimension of vehicle body) can be recovered to the original standard of manufacturer and met with respective legislative requirements.</li> </ul>
Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:</p> <ul style="list-style-type: none"> <li>• Capable of mastering the structure and functions of vehicle body and frame (including compartment trim, etc.) to enhance the efficiency and accuracy of complicated defects inspection, such as driving stability, noise, seepage and compartment appearance;</li> <li>• Capable of mastering the characteristics and application limits of different materials of vehicle body and frame as well as the impact of joining methods on the structure and cabin appearance, etc., to solve the complicated technical problems, such as yawing and colour fading, etc., effectively and accurately;</li> <li>• Capable of mastering the strength of vehicle frame or structural panels required by the vehicle manufacturer and respective regulations; compiling appropriate repairing guidelines; and</li> <li>• Capable of compiling reports covering preventive measures and providing suggestions for improvement, etc. according to the specific defects found in respective vehicle body and frame (including the compartment trim).</li> </ul>
Remark	<p>The credit for this competency unit assumes that the practitioner already has possessed extensive knowledge of automotive body construction and knowledge of vehicle body repair (body correction, welding and painting).</p>